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PUBLICATIONS OF THE SIERRA CLUB

No. 48

SIERRA CLUB BULLETIN

Vol. IX No. 2

JUNE, 1913

SAN FRANCISCO, CALIFORNIA

1913

SIERRA CLUB BULLETIN

FOUNDED 1892

Edited for the Club by

WILLIAM FREDERIC BADÈ

JUNE, 1913

Vol. IX No. 2

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All communications intended for publication by the SIERRA CLUB, and all correspondence concerning such publication, should be addressed to the Editor, WM. F. BADÈ, Room 402 Mills Building, San Francisco, California.

Photographs submitted should be unmounted and separate from manuscript. Reprints of articles are printed only at the request and expense of the author.

Correspondence concerning the distribution and sale of the publications of the Club with reference to advertising rates and space location, and concerning its business generally, should be addressed to the Secretary of the Sierra Club, Room 402 Mills Building, San Francisco, California.

This publication for sale at 402 Mills Building, San Francisco, and at Dawson's Book Shop, 518 South Hill Street, Los Angeles, also at De Witt & Snelling, 9 Telegraph Avenue, Oakland.

Price, 50 cents per copy.

VIEW IN PROPOSED ROCKY MOUNTAIN NATIONAL PARK.

See page 113.

Photograph by H. W. Gleason.

SIERRA CLUB BULLETIN

VOL. IX SAN FRANCISCO, JUNE, 1913 NO. 2

THE MOUNTAINEERS' WINTER OUTING ON MT. RAINIER.

BY LULIE NETTLETON.

Since snow, fluffy, exhilarating, real snow does not come to Seattle, Seattlites must seek the snow. Consequently it has become the annual custom for the Mountaineers to go back into the hills and spend New Year's enjoying winter sports usually confined to colder lands. Particularly elaborate preparations were made for the winter outing of 1912 to Mt. Rainier, for this was the first opportunity the majority of us had ever had of viewing our great mountain at close range in the grasp of winter. The Seattle-Everett party left Seattle in a special car 7:20 A. M., December 28th, and were joined in Tacoma by a delegation from that city.

Midday found us at Ashford anxiously viewing several rather dubious-looking sleighs drawn up at the little station. Since a sleigh ride is an almost unknown quantity on Puget Sound, we hailed even poor sleds as a luxury. Our start was quite as we had anticipated; the bells were merry, the road white and soft, the woods an exquisite crystal palace, the air like wine,—in short, all the stage-settings were perfect for a sleigh-ride of song and story. There was just one flaw, and that was the sleighs themselves. They proved to be of such delicate construction that we soon resorted to our own feet as more dependable, and walked to Messler's, a distance of five miles. There a hot lunch fortified us for the nine miles that lay between us and the National Park Inn at Longmire's Springs.

The imposing entrance to the Rainier National Park was passed early in the afternoon, appearing doubly impressive with its white cornice of snow. The office of the Park Superintendent, on the contrary, seemed to have lost its summer dignity and peeped at us from its cozy nest of snow, like a Santa Claus house in a shop window.

The snow upon the road lay about three feet deep and was very soft, so strong men broke the trail and the rest "came

tumbling after." Darkness settled about us and going became doubly difficult. But the ethics of the trail forbade complainings, and we plunged on, making merry over our stumbles. Leaders of the party encouraged their followers with beautiful fairy tales of a warm inn, where dinner awaited us. Never did storm-driven mariners watch more eagerly for a guiding light than we for the glow in the hotel window, and when the dream had materialized in the form of dry attire, a roaring fire, and a hot dinner, the hardships became an amusing memory. Sunday the snow changed to pouring rain and while a few tried out snowshoes, the majority lounged in the hotel or before the huge fire in the clubhouse.

The outfit necessary for this trip was unique to say the least. Since the average resident of this mild climate is not equipped for deep snow, the sudden demand for cold-weather articles had caused a rush upon Alaskan outfitters, and calls upon friends from colder regions. Consequently the equipment was almost international in character—German socks, Swedish stockings, Alaskan mucklucks, Canadian and Alaskan snowshoes, and Norwegian skiis. The equipment was brought into play on Monday, when a grand snowshoeing expedition was planned to Narada Falls. We were nearly all of us novices and embarked upon the snowshoes with some trepidation. The nautical term is used advisedly, for the novice in snowshoeing is liable to capsize, or make shipwreck, or experience any misadventure incident to voyagers on the high seas.

We followed the Government road, then branched off on the Paradise Trail and soon found ourselves in a remote wilderness ruled by the frost giants. We shall always remember the transformation worked by the snow on the vegetation of this perfectly normal Washington forest. Fallen stumps and twisted branches were changed to white monsters, sea-serpents, and shapes of prehistoric creatures, with here and there a white-robed nun to give us confidence. The trail was blind because the snow-drifts came above the blazes on the trees. The Paradise River was no longer the charming mountain stream of summer-time, but a dark, raging cataract, making its way between flawless white walls. Eagle Peak loomed beyond, a pure white crest through the snow-filled atmosphere. Narada Falls, one of

MT. RAINIER NATIONAL PARK. NISQUALLY VALLEY,
FROM THE GLACIER.
Photograph by Asahel Curtis.

PARADISE VALLEY, MT. RAINIER NATIONAL PARK.
REESE CAMP AND TATOOSH RANGE.
Photograph by Asahel Curtis.

PARADISE VALLEY, MT. RAINIER NATIONAL PARK. FOREST RANGERS' NEW CABIN AT CAMP OF THE CLOUDS, ELEV. 5600 FEET. PROFS. H. B. BENNETT AND LESLIE CURTIS. JAN. 1, 1913.
Photograph by Milner Roberts, University of Washington, Seattle.

PARADISE VALLEY, MT. RAINIER NATIONAL PARK. CAMP OF THE CLOUDS AND TATOOSH RANGE.
Photograph by Asahel Curtis.

the famous points of interest of that region, was reached after a climb of 2,000 feet within a distance of five miles.

Tuesday, December 31st, one party spent a delightful day in exploring the Ramparts, while a second party of six boldly started for Paradise Valley. The day was not propitious. Snow filled the air and a fierce wind beat against us, but we all loved a storm and felt a stern, exhilarating joy in braving the blast that was trying to keep us from gaining our Paradise. Heavily laden trees swayed and creaked dangerously, small branches were torn by the wind, and fell all about us. The icy wind stung our faces and obliterated the trail a moment after we had passed. The road to Paradise was a long one, truly, but by one o'clock we had reached our goal and stood spellbound in an unreal world. The rustic bridges were barely visible above the white, the roof of a ranger's cabin showed above a drift. Paradise Valley is charming as a home of mountain flowers and exquisite verdure, but as we saw it, robed in a mantle of snow a score of feet in depth, it attained a dignity and majesty that will make it stand alone in the gallery of mountain memories.

But dignity and majesty are not conducive to creature comfort and concluding that "that were paradise enow," we traveled back to the inn. We watched the old year "pass over the divide" with a grand vaudeville performance, a session of limericks, music and dancing. At midnight we formed in a circle and, joining hands, sang "Auld Lang Syne" with a will; then, with shouts, welcomed the New Year as it came up the trail. During our stay our mountain had been hidden in clouds; but New Year's morning we rose early to prepare for the journey home, and looking out of our windows, we saw it, a gleaming mass in the dawn—an omen of good for the New Year.

Newly fallen trees along our homeward route told of the fury of the storm that had passed. Arrived in civilization, we learned for the first time, from harrowing press reports, that our whole company had been lost in the wilderness; heard of our hairbreadth escapes from avalanches, and of suggested search parties. But our radiant faces proved beyond a doubt that we were living, breathing devotees at the shrine of Rainier, not frozen offerings to the mountain that was God.

BLUE HILLS.

Blue hills beneath the haze
That broods o'er distant ways,
Whether ye may not hold
Secrets more dear than gold,—
This is the ever new
Puzzle within your blue.

Is't not a softer sun
Whose smiles yon hills have won?
Is't not a sweeter air
That folds the fields so fair?
Is't not a finer rest
That I so fain would test?

The far thing beckons most,
The near becomes the lost.
Not what we have is worth,
But that which has no birth
Or breath within the ken
Of transitory men.

—*Charles Goodrich Whiting.*

BUTTERFLIES OF THE MOUNTAIN SUMMITS.

By Vernon L. Kellogg.

The insects of the high mountains have a particular interest both to special students of insects and to mountaineers. This interest comes not so much from any particular appearance or modifications of body, or extremely unusual habits or modes of development, as from the simple fact of their being where they are. Finding delicate little butterflies clinging to the great rocks of a mountain peak, or fluttering in the brief sun over the rare fragrant beds of dwarf forget-me-nots and buttercups at the oozy edge of a glistening snow-bank above timber-line, has all the thrill of discovering such flutterers far out at sea. Someway the high mountain top seems a foreign place for such frail creatures. And you pity the poor things blown up the mountainside by some untoward wind, or drifted there by their own wayward wandering. But you waste your pity. They are neither compelled expatriates nor foolish inquisitives from softer, safer climes below. They belong here, they find their food and shelter here, they rear their young here, and as butterfly happiness may be imagined to go, are happy here. That is, they live and live as successfully among the rocks and snow-banks of the mountain summit, as their less strenuous fellow species live in the meadows of the lowlands. Like the marmots and the conies, representing the mammals, and the leucostictes, representing the birds, these Erebia and Chionobas species are the high-altitude representatives of the butterflies. They are alpine residents, and snow and icy wind and bleak brown rock are their habitual associates.

It was twenty years ago, when I used to spend my camping and climbing summers in the Front Range of the Colorado Rockies, that some of these summit butterflies first became familiar friends. So that when I had got above timber-line or even to the very top of the peak—and the high points in the Colorado Rockies run from 13,000 to 14,000 feet just as in the California Sierra Nevada—I did not give all my attention to distant scenery, but spent part of it making acquaintance

with the lofty summit butterflies. I would unlimber a little butterfly net with jointed handle, and chase about over the rough surface in an atmosphere about one-half as dense as that of sea-level, until I would sink breathless and exhausted on the soft flower-studded turf by the side of a great snow-bank, and then content myself with watching my would-be victims take their dainty sips of nectar and hunt eagerly for the right little plant on which to lay their eggs.

The most successfully elusive flutterers, in this life and death game of hide and seek, were certain small velvety dark brown butterflies which belong to a species, *Erebia magdalena,* limited to Colorado's mountain tops. Whenever I flushed one it always made for the roughest patch of jagged rocks anywhere near, and there it slowly fluttered invitingly over them until after violent and painful scrambling I was ready to strike with my net, when it would dive swiftly down to safety into the dark openings among the uneven stones. I have seen specimens go down into one of the pit-like refuges and then come out ten or a dozen feet away from another opening connected with the first by a dark sinuous way among the rocks.

No Erebias have yet been found in the Sierra Nevada, but it is highly probable, nevertheless, that one or more species occur there. And some Sierra Club member should be first to find them. They cannot be mistaken; small, velvety, dark brown butterflies, expanding about one and a half inches. The species found may have a single small eye-spot with yellowish ring for a margin on either fore or hind wings or even on both. Two or three species occur in Alaska and one in the Yellowstone. They may occur anywhere above timber-line to the summits.

A group of alpine butterflies which is represented in California is the interesting genus *Chionobas,* (or *Oeneis)* of which species occur on Mt. Katahdin in Maine, on the White Mountains of New Hampshire, on the Rockies and on our own Sierra Nevada. This curious and suggestive distribution of these alpine butterflies, appearing as they do on mountain summits from the Atlantic to the Pacific, but wholly absent in the great regions between these mountains, and the further extraordinary fact that the Katahdin, White Mountain and Rocky Mountain representatives of the genus all belong to the same

species (showing only certain slight variations which have given them separate sub-species ranking), present to us one of the most important and interesting special biological problems in butterfly life. Nor is it a problem limited to butterfly distribution, but it is one that arises in the consideration of the distribution of any other mountain-top insects or other animals.

The problem has had much attention, and its solution seems to be that most of these mountain peak species are the persisting representatives of almost unmodified descendants of Glacial Epoch forms, the offspring of stranded individuals left on the summits at the time of the retreat of the great ice-fields. The glacial species extended across the continent in glacial times. With the retreat northward of the ice-sheets some animal and plant kinds retreated with it, but others followed the withdrawing local glaciers up the mountain cañons. The ones that went north are to-day Arctic species ranging across the northern part of the continent. The ones that went up the mountains are to-day alpine species existing in little isolated groups on widely separated mountain summits in mid-continent latitudes. Some alpine forms extend north along the summit of a mountain range, as the Rockies or the Sierra Nevada, until they reach Arctic or sub-Arctic conditions and then range across the continent. Altitude equals latitude as regards biological environment, and our little butterflies of the mountain tops in sunny California are really living in and enjoying the Arctic conditions of their glacial time ancestors, and of their far northern cousins of to-day.

There is interesting experimental proof of the fact that the Arctic and alpine forms are the older, and the southern and lowland forms the newer, in a species of butterfly represented in Europe by several different varieties. This proof is that afforded by the work of Fischer, a former student of the University of Zurich. The butterfly in question is the widespread and familiar mourning-cloak, or Camberwell beauty, *Euvanessa antiopa*. It occurs almost everywhere in the north temperate zone, but while it shows little variation in North America, in Europe it exists in a series of distinct, although gradating varieties, each characteristic of a rather narrow latitudinal zone.

The great mountain chains of Europe run east and west (instead of north and south as in North America) and so when the ice-sheets of the Glacial Epoch swept southward hosts of species of plants and animals were crushed out of existence between the ice and the mountain barriers. A few species, more plastic and adaptable than the others, became modified sufficiently rapidly to the Arctic conditions to avoid extinction. From them the present-day fauna and flora of Europe have largely descended.

In the light of this probable evolutionary relationship of the warm weather butterflies of Europe to their cold weather forms, and in the further light of the familiar so-called "biogenetic law" of Hæckel and Fritz Müller which declares that each individual of a species passes in its personal development from egg cell to adult, through a swift and incomplete but suggestively revealing recapitulation of the ancestral development, or evolution, of the species to which it belongs, Fischer made the hypothesis that the southern varieties of the mourning-cloak were the descendants of the northern varieties, or, more precisely, that all the varieties were the successive descendants from the most northern or truly Arctic form, which could be looked on as the persisting Glacial Epoch form itself. If this were true, and the biogenetic law is true, he argued that the reproduction of a glacial time climate during the development of a southern mourning-cloak ought to arrest its development at a glacial time stage, and a northern variety should issue from the chrysalid of a southern individual. As a matter of fact Fischer was able, after some experimenting, to produce at will, by proper refrigeration of the chrysalids of southern (Italian) mourning-cloaks, almost any one of the northern forms even to the most northern or Arctic one itself. Since then other investigators have tried similar and modified experiments with other species, and their results have on the whole clearly substantiated Fischer's hypothesis. It is true that low temperatures tend to produce, whatever the ancestry of the individual, a darkening of color and certain changes in pattern. But this directly environmental effect need not be confused with the effect of an arrest of development at an earlier ancestral stage. For the exact reproduction of the color

pattern of a northern form by the refrigeration, during development, of a southern form, is something readily distinguishable from a mere general darkening of color tone.

To return from our digression to the interesting Chionobas butterflies, whose distribution was excuse for it, we find them represented on the peaks of the Sierra Nevada by at least one well-recognized species, *Chionobas iwallda,* with the probability that one or two other species, so far recorded only from the Rocky Mountains, or from the Coast Mountains of British America, will be found in California. Chionobas is larger than Erebia, and is of a wood-brown color, with one or two small blackish eye-spots in the apex of each fore wing. It is, even more strictly than Erebia, a thing of the bare rocks of the mountain's summit. It is rarely seen upon flowers or sipping water from a snow-bank's edge. It alights on the rough rocks, balancing itself in the harsh wind, with many a tipping and righting, but ever clinging fast with delicate legs and tiny claws. Or it settles with curious, hesitant, then suddenly certain manner on the little lee patch of bare soil made by the weathering of some great rock. The wings seem curiously large for the frail body, and there is something in all its appearance that makes it different from lowland butterflies, just as its strange life as hermit on the bleak peaks is so profoundly different from all that we conceive the life of the gregarious, dancing, painted flutterers of the flower-strewn valley meadows to be.

Scudder, who studied *Chionobas semidea* on the top of Mt. Washington, notes his surprise upon discovering that these butterflies, which one would expect, perhaps, to find endowed with powerful flight to resist the fierce blasts that sweep across their summit home, are really unusually weak as flyers. They can offer no resistance to the winds, he says, and if they ascend more than two or three feet above the surface of the ground, or pass the shelter of some projecting ledge of rocks, they are hurled headlong to immense distances until they can again hug the earth. He remarks, with interest, their special devices to escape pursuit. One is, when alarmed, indeed at most times, to fly up and down the slopes, rarely along them, thus rendering pursuit particularly difficult. But it seems hard to accept

this explanation of the habit, for the only creatures whose pursuit would thus be rendered unusually difficult are human butterfly chasers, and, surely, there are not enough of them on Mt. Washington, nor have been in ancient times, to lead to the elimination of the along-slope flyers and thus to the establishment, by selection, of the other type. About the only actively pursuing enemies of the Chionobas are the few high-flying birds, and they can fly as well up and down slope as along it.

Chionobas, like Erebia, will drop down into a crevice between rocks to escape when closely pressed. The under sides of the wings are mottled and marbled in dull color tone, and Scudder noted that *semidea* has the habit of tumbling on one side with a sudden fall, as soon as it alights, thus especially exposing the under sides of the wings with their mottled markings next the gray rock mottled with brown and yellow lichens. It is an obvious case of protective resemblance, with a special habit to aid the color pattern to become effective as a concealment.

Another strictly mountain summit California butterfly is *Papilio indra,* one of the swallow-tails. It is one without much tail, and with no very great size or brilliancy of appearance. The wings, which expand only about two and one-half inches, are dark velvet brown with two broken yellow bands across each one. These bands, one very near the margin and one farther in, are made of separate small yellow blotches, those in the marginal series being much smaller and more widely separated than those in the inner series, and the marginal band itself thus much more broken than the sub-marginal one. I have never seen this adventurous swallow-tail alive, although I have looked closely for it on many peaks and especially on the top of Mt. Tallac, reputed to be one of its favorite resorts.

The veteran butterfly collector Wright says that it is at home on sharp rocky peaks of 10,000 to 12,000 feet in height, never coming down the mountainsides lower than 9000 feet. "It is peculiar in its habits as well as in its habitat," he writes, "in that while most Papilios are good feeders, Indra spends its time on those high, bare rocks in sunning itself when the sun shines, and in occasionally starting up energetically to flirt with or to fight some other butterfly, but never wasting any time in feeding on flowers to prolong its life.

"It is the most difficult of all California butterflies to capture, as it frequents the most inaccessible places, and is moreover exceedingly wary. I have spent much valuable time (for on the top of a peak 10,000 feet high, time is always valuable), in watching it to learn if possible the secret of its food plant, but always unsuccessfully. Because it does not feed on flowers, and for other reasons, I believe that the life of the individual butterfly is very short, indeed, say from three to eight days, according to the weather, and that its life as a butterfly is wholly spent in play and in the reproduction of its species."

The genus *Brenthis,* related to the familiar silver-spots or fritillaries (*Argynnis*) is another group of butterflies whose few species are mostly Arctic or alpine. A few of these species occur in California, but none of the strictly summit-inhabiting forms has yet been found here. In the Rocky Mountains two or three peak kinds occur, and it is wholly likely that one or more of these, or some closely allied form, will be found on the Sierra Nevada. These butterflies expand only about one and a half inches, and have a reddish and yellowish-brown ground color on the wings, variegated by many darker spots. They cannot be mistaken for either of the plainer, self-colored genera, *Erebia* and *Chionobas.*

A single species of the familiar group of yellows (*Colias*) is occasionally found on, or at least near, the summits. Its scientific name is *Colias behri,* thus bearing with it the memory of one of California's early and most active butterfly hunters, Dr. Hermann Behr, curator of insects, for many years, in the Academy of Sciences. While most Coliads are bright yellow and of some size, Behri is a tiny little thing of little more than an inch in expanse, and of a curious dusky greenish-yellow, or dusky yellowish-green color, characteristics making it seem something well removed from its warmer-climate larger cousins. And in habit and habitat it is thus removed from most of them. But not from all. In the Rocky Mountains I used to catch a rather small dusky greenish-orange *Colias* known as *meadi,* very high up on the mountain flanks. And several species of *Colias* are strictly Arctic in distribution. All of these cold weather Coliads, alpine and Arctic, have a marked dusky cloudiness over the yellow and orange ground

color of the wings, and a curious admixture of greenish in the ground color itself. As a rule, indeed, all high altitude butterflies are darker than their near relations of the lowlands.

When one extends one's attention from the very summit to those still bleak but a little less cruel parts of the mountain, its flanks above timber-line and just below it, meeting with more kinds of butterflies is likely. This becomes certain if one works still a little further down the mountain slopes and comes to the shores of the upper glacial lakes in the great cirques and cañon heads, and to the still lower, but still alpine, upper glacial meadows, those smooth green fairy playgrounds in which grasses have supplanted water, and fragrant flowers grow lush in the short season of summer sun.

Here you will find one or two other yellow and orange Coliads, a few adventurous checker spots, and two or three gossamer-winged, iridescent little "blues," species of *Lycæna.* These tiny dancing blues that flit along the wet edges of the lake, alighting daintily on the mud or rocks for a rest, or on the flowers for a sip of nectar, are among the most attractive of mountain butterflies. But neither they nor the yellows, nor yet the various abundant silver spots, meadow browns, checker spots and skippers that occur in the lower glacial meadows are particularly different in appearance or general habit from their related species of the lowlands. Indeed, some of them are only rather bold, errant individuals belonging to species which belong normally to the lower mountain flanks and foothill valleys.

There is, however, a single group of odd, aberrant butterflies all of whose species occur only in Arctic or mountain regions, and when in mountains usually at altitudes that range from five to nine or ten thousand feet. They never, or rarely, get up to the very summits, but also they never, or but rarely, get down to the real lowlands, at least in California or the Rocky Mountains. These butterflies, of which but few species are known, compose the family Parnassiidæ and are commonly called Parnassians. The family is world-wide in its range, characteristic members of it occurring in the Alps, the Caucasus, the Himalayas and elsewhere in the great mountain groups of the globe.

Although there are, as I have just said, but few distinct species—indeed, authorities recognize but two in California—yet each of these species is composed of a number of fairly recognizable varieties or sub-species, so that the careful collector can certainly find at least half a dozen recognizably different forms of California Parnassians. The two admitted species in our fauna are *Parnassius clodius,* whose varieties are found only in the mountains of the Pacific Coast, and *Parnassius smintheus,* whose varieties occur both in the Rocky Mountains and the Sierra Nevada.

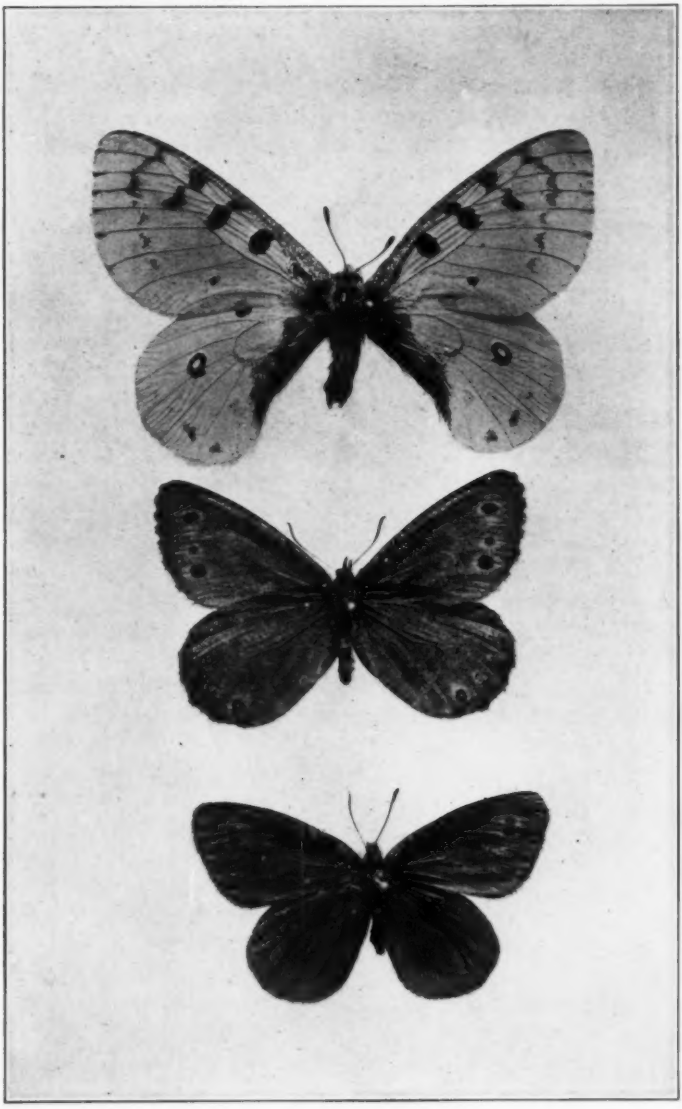
All the Parnassians are rather large butterflies, expanding from two and a half to three and a half inches, but showing much variation in size, specimens from the higher altitudes being often much smaller. The wings have a curious, almost translucent, solid white ground color—in one Alaskan species the color is pale lemon-yellow—and the heavy body is clothed with gray and dark hairs. The hind wings bear on both upper and lower sides a few irregularly circular reddish spots, sometimes with a whitish center. One or two of these spots occur also on the fore wings of certain varieties. There are also, especially on the fore wings, a few blackish spots or small blotches, and the inner margin of the hind wings is broadly bordered with blackish. There is usually a faint dark band across the fore wings near the outer margin.

The flight is irregular and jerky, usually rather slow and near the ground. They are easily seen because of their large size and whitish color, and are not difficult to catch. They occur in the Rocky Mountains in considerable numbers at about 8,000 feet altitude, in the characteristic glacial parks of the Front Range. In California they range from much lower altitudes to much higher ones, records of captures at nearly sea-level and at 12,000 feet having been made.

The peculiar faintly smoky translucent appearance of the wings of the Parnassians is due to the fact that the "butterfly dust" or scales which cover the wings and on which all color and pattern of butterflies depends, are not, as in other butterflies, short, flat and broad, and closely and regularly arranged in a complete shingling covering over the wing surfaces, but are narrow, rather sparse, and irregularly arranged, and thus

do not form a complete flat color layer on the wings. This curious and wholly unusual character and disposition of the scales in the Parnassians is associated with several other structural aberrances which are hardly of a nature to interest the general reader, but which add to the interest that these strange butterflies have for students of insects.

I should make an end of this paper, and yet I have said nothing about the life of the larvæ, or caterpillars, of the mountain butterflies. There is indeed not much to be said about them, for not much is known. Of *Papilio indra,* for example, the eggs, caterpillars and chrysalids are still wholly unknown. And this is true of some of the others. But of others, still, some little is known of the immature life, and it all agrees in revealing a high tolerance of low temperatures on the part of the caterpillars. There is indeed little doubt that most of them can be frozen and then thawed out with perfect safety. The eggs are laid on dried grasses or on the proper food plant, and the whole immature life is gone through with very swiftly. Just as some mosquitoes of desert regions are able to condense their larval life into one or two days and their pupal life into a few hours, the whole keeping pace with the short existence of a swiftly drying pool formed by one of the rare desert rains, so the butterflies of the mountain-tops have had their life-history adapted to the short alpine summer season. With the oncoming of this season when the sun burns hot and melting, through the thin atmosphere, on the great snow-banks, small grasses and flowers spring up swiftly by the wet edges of the snow and along the tiny rivulets that run away from it. On these low green plants the caterpillars feed voraciously and grow rapidly. The chrysalids are formed, either on the ground or attached to plant stems, nearby, and the issuing butterflies quickly expand their wings, have a few sips of nectar, and a few dancing flights over the rocks and fragrant flower patches, then mate, lay their eggs and die. A week must be a fair old age for most of the summit butterflies; a fortnight is octogenarianism, and any longer is the miracle of Methuselah.



MOUNTAIN BUTTERFLIES.

Parnassius, at top; *Chionobas,* in the middle; *Erebia,* at bottom. (Natural size.)

MT. RAINIER NATIONAL PARK. NARADA FALLS AND EAGLE PEAK.
Photograph by Asahel Curtis.

MT. RAINIER NATIONAL PARK. SNOW-COVERED ROAD TO THE GLACIER.
Photograph by Asahel Curtis.

MT. RAINIER OR MT. TACOMA—WHICH?

By Alexander McAdie.

The following editorial, recently published in a western paper and in character not unlike numerous others appearing in eastern papers, will be read with interest by many and the question naturally asked, Why not make the change?

Tacoma is a far finer name than Rainier. This is historically and esthetically right, notwithstanding the arbitrary decree of the U. S. Geographic Board, which some fifteen years ago ordered that the mountain should be called Rainier and not Tacoma. Historically, this decree has no reasonable foundation. It (sic) was conferred on the mountain by Vancouver in honor of a British naval officer who happened to be his friend. Why should an American mountain be named after a Britisher who never saw it?

On the other hand, Tacoma is an Indian name, racy of the soil and connected with a most interesting body of aboriginal folk lore. The ruthless, blundering hand of a Washington bureau should not destroy these links with the past.

I hold no brief for the Board of Geographic Names; but it may be assumed that that board in this as in other decisions acted only after investigation and with a full knowledge of the historic facts. It is unnecessary to add that the board was not influenced in its judgment by clamor or any question of advertising value.

The Sierra Club, an organization of nearly two thousand mountain lovers, stands committed to the use of original names when duly authenticated, and in several instances has pleaded for the retention of significant and appropriate Indian or Spanish designations. Wherever possible it prefers the use of original designation.

Some years ago the club was asked to lend support to a movement to substitute the name Tacoma for Rainier. At the request of the Board of Directors, Professor George Davidson then Professor of Geography in the University of California and for thirty years head of the United States Coast Survey on the Pacific Slope, made a thorough investigation of the claims advanced by the proponents for the change. Although

his report* is easily accessible and no question or argument has been made as to the fairness and disinterestedness of the investigator, few, if any, of our northern fellow-mountaineers have given the report the recognition it deserves. On the other hand, the press continues to issue misleading and erroneous statements.

Professor Davidson was personally familiar with that section of the country and spent six years' (1852-1857) continuous service in the Puget Sound region. After carefully reviewing all the facts in the controversy, he decided that in conformity with the usage of historians, geographers, and Government records for more than a century, no change should be made. He gives six criteria for determining the proper use of a geographic name:

1. By Governmental decree.
2. The accepted right of a discovery in a new country with uncivilized inhabitants or with no inhabitants.
3. The long usage of geographers, navigators, travelers, and historians.
4. The general opinion of experts in either or all of the preceding sources of authority.
5. The striking peculiarity of the locality or object.
6. The names adopted by any other country for geographic objects.

It appears that under all of these tests the proper name of the mountain is Rainier. It is also shown that Tacoma was not the original name, but an after-thought. There is much uncertainty as to the exact meaning and proper pronunciation of the word Tacoma. The original Indian pronunciation may have been Tahoma, Tagoma, or Tacobet. It is in its essence a tide-water name used by Indians who probably never ascended the mountain. And it may not be out of place to recall that either from superstition, or from fear, or laziness, the noble red man has never been a mountain climber; and that even as a guide for the lower reaches of the mountain, his services were always of doubtful value. The word Tacoma is not particularly appropriate for the mountain. Nisqually or Ohanapecosh would naturally have preference over Tahoma.

* It may be found in full in the SIERRA CLUB BULLETIN, Vol. 6, No. 2, page 91.

The mountain was named Rainier by Captain George Vancouver in 1792. In an article in the SIERRA CLUB BULLETIN, Vol. 6, No. 1, there is given a measurement of the height of the mountain and the historic facts relating to its discovery. Vancouver named "the round snowy mountain," after his friend Rear-Admiral Rainier. No one had a better right to stand sponsor. The names which he gave to the peaks, bays, channels and islands of that section are all in use to-day. Mount Hood and Mount Baker, after Lord Hood and ~~Admiral~~ Baker; Puget Sound, after his first officer, Peter Puget; the Straits of Georgia and Queen Charlotte Sound, after his King and Queen; Discovery Island, after his ship, and so on through the list. All of these names remain unquestioned.

The advocates of a change insist that Rainier was a naval officer who sank one of our ships during the Revolutionary War. Granted that this be so, does it not add an element of historic interest? They ask, "why should the mountain be named after an English admiral who never saw it?" forgetting that our well loved Mount Vernon gets its name from an English admiral who never saw it. Nor are they well informed when they question Vancouver's right to use names of friends. Every explorer does exactly this and properly so.

Few people on the Pacific Slope are familiar with the work of Vancouver and realize how much we owe him. Professor Davidson, who re-occupied the positions from which Vancouver made his surveys, says that no man ever did better surveying work, considering the dull sailing ships and the surveying instruments then in use. Nor should we forget the eloquent tribute paid him at the time of the Alaska boundary discussion:

> In the conventions of 1822-1825, between Russia and the United States and Russia and Great Britain, the only charts available for that long diplomatic controversy were those of Vancouver; by the decisions of those conventions Russia held all the Archipelago Alexander; and in 1867 the United States purchased from Russia the territory of Alaska, won by Vancouver's silent but unanswerable testimony.

As to the exact height of the mountain, continued misstatement has been made in various publications of a popular*

**Scribners* and *Colliers* may be instanced as offenders. The height of the mountain is given as 14,800 and the statement added, "the highest mountain in the United States proper. It is also called Mount Tacoma."

character. In July, 1905, the writer, with the help of Professor J. N. Le Conte and various members of the Sierra Club, measured the mountain, using the same methods, same instruments and same men used in measuring the height of Mount Whitney and Mount Shasta in California. The result of the measurement, duly published in an official publication and duly ignored by those writing for popular publications, was 14,394 feet. The exact height within limits of a foot cannot be determined until a line of precise levels can be run, and this will be always difficult owing to the large snow area. A re-determination of the height, by the United States Geological Survey, 1912, is 14,363 feet. The true height probably lies between the two values given.

It is plain, then, that the mountain is not the highest in the United States, exclusive of Alaska. So far as known this honor belongs to Mount Whitney, in California, height 14,502 feet.

Rainier is, however, one of the most beautiful mountains in our country and undoubtedly at one time was fully five hundred feet higher than it now is.

MT. RAINIER IN WINTER. THE OLD SIERRA CLUB CAMP OF 1905 WAS IN GROVE ON THE LEFT.
Photograph by Asahel Curtis.

BEHR'S ALPINE SULPHUR.

Upper, male; lower, female. Considerably enlarged.

A BUTTERFLY OF THE HIGH SIERRA NEVADA—BEHR'S ALPINE SULPHUR.

By Fordyce Grinnell, Jr.

The subject of this sketch, which is known to naturalists under the name of *Colias* (*Eurymus*) *behrii*, and which might be called by the common name Behr's Alpine Sulphur, is of interest to Californians from at least three points of view, viz: it was first collected by members of the historic State Geological Survey under J. D. Whitney, some time before 1866; secondly, it was named in honor of one of the greatest of the pioneer naturalists of California, Hans Hermann Behr, who came to California in 1851, where he resided until his death in 1904; thirdly, it is one of the few butterflies in North America which is restricted to an altitude of 10,000 feet and above; and is a recent survival from the ice-cap.

This butterfly was described by W. H. Edwards in 1866 in the *Proceedings* of the Entomological Society of Philadelphia, "from two males and one female, received from Dr. Behr, and taken among the Yo Semite Mountains at an elevation of about 10,000 feet above the sea." It was again described and beautifully figured by Mary Peart in Edwards' "Butterflies of North America," Vol. I. Henry Edwards, in reviewing the group of butterflies to which Behr's Sulphur belongs, says of it: "This very characteristic and distinct species, which has been rightly named in honor of Dr. Behr, the pioneer of California entomology, is found only about the rim of the great Yosemite basin, and usually at an altitude of from 8,000 to 12,000 feet. In these unfrequented spots it flies sparingly, and is, of course, difficult to capture, from the rugged nature of its haunts. It seems chiefly to settle on the flowers of a species of *Eriogonum*. Nothing is known of its early stages, and at present it is remarkably rare in collections."

The male of Behr's Alpine Sulphur has a wing expanse of about one and a half inches. The upper side of the fore wings is of a dark greenish-yellow, sprinkled with black scales;

broad, black border with a narrow yellow fringe on both wings, and a black spot toward the upper central part of the wing, with a yellow streak within. The hind wings have a yellow spot corresponding in position to the black spot of the fore wings; the black marginal border is less extended, but clear cut. The under sides of both wings are of a much paler greenish-yellow, specked with small black scales; the discal spots are more vague than on the upper side. The upper edges of the wings are rose-colored as well as the antennæ, which are furnished with a black club. The female is a little larger than the male, of a paler green, and the marginal black border is less distinct and fading gradually into the ground color of the rest of the wing; the fringes are more or less roseate in contrast to those of the male, which are yellow. This butterfly is most nearly related to the Arctic Sulphur (*Colias nastes*, Boisduval), which is found in Labrador, Greenland, Arctic America, and said to be found on the mountains of British Columbia and some varieties which are found in Lapland, Nova Zembla, and the Swiss mountains. It differs from Behr's Sulphur in that the marginal border is broken up into spots and the discal spots indistinct and greenish-white instead of clear yellow; it is larger and much paler in color. So it can be seen that our butterfly of the High Sierras is a descendant of the ice-cap species, which once extended continuously to the Arctic regions, but now survives only at especially favorable locations of our mountains.

The localities, besides those mentioned above, where this butterfly has been taken are: Dr. E. C. Van Dyke of San Francisco found it in 1892 on the side of Mt. Lyell and in the Tuolumne Meadows and on the peaks surrounding these meadows, but did not find it common. Again, in July 1910, Dr. Van Dyke collected it in Bubbs Creek Cañon, Kings River, at an altitude of 10,500 feet, where he found it common, and flying along the meadow-like margins of the alpine streams and lakes; an alpine lupine which was quite abundant he concluded to be its food plant. The late Mr. J. B. Lembert, who lived for so long in the Tuolumne Meadows and of whom an account is given in the January number of the BULLETIN, collected this butterfly in large numbers in the above-named place. He

studied the life history pretty completely, from the egg to the adult butterfly, and sent alcoholic specimens to Dr. H. G. Dyar, who described them minutely in the *Canadian Entomologist* for 1893. The eggs are deposited singly on the upper sides of the leaves of a species of ground huckleberry, its food plant. The egg is spindle-shaped, with low longitudinal and transverse ridges which divide the surface into shallow, rectangular parallelograms; it measures 1.3 x .6 millimeters. The last stage of the caterpillar (there are five) has a pinkish-white dorsal line, very narrowly black-bordered, running the whole length of the body. The ground color is probably some shade of green in living specimens; with two or three other lines on the body parallel with the first mentioned. The chrysalis appeared to have been yellowish-green, with a lateral pale line on the abdomen.

The specimens of the butterfly collected by the State Geological Survey I saw in Dr. Behr's collection in the museum of the California Academy of Sciences of San Francisco in 1902; these were destroyed in the fire of 1906. Edwards' types, from Dr. Behr, also collected by the Survey, are in the Carnegie Museum, Pittsburg, Pennsylvania. Dr. Strecker also received specimens from Dr. Behr; his collection is in the Field Museum of Natural History, Chicago.

I hope this account of an extremely interesting butterfly will arouse the curiosity of a few Sierra Club members sufficiently so that they will be led to look for this butterfly during the coming summer trip, and add to our really meager knowledge of the habits and distribution of Behr's Sulphur, which has survived the changes of climate and its harsh environment ever since the glacial epoch; isolated from its relatives in Labrador and Arctic America and Europe for a long enough time to enable it to assume an entirely distinct appearance.

"I am a part of all that I have met."

[If there are any members of the Club who would like to know how to capture and preserve butterflies, so that they can add to our knowledge of this species, the writer would be glad to give the needed information if they will write to him at Pasadena.]

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SIERRA CLUB BULLETIN.

PUBLISHED JANUARY AND JUNE OF EACH YEAR.

Published for Members. Annual Dues, $3.00.

The purposes of the Club are:—"To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada Mountains."

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EDITORIALS.

Stockmen and Yosemite National Park. Last April application was made to the Secretary of the Interior by two California Livestock Associations for the temporary opening of Yosemite National Park to stock grazing on account of the existing drought in Southern and Central California. The Sierra Club and other organizations and individuals immediately entered strong protest against any such movement, and various communications relating to it will be found among the notes and correspondence. The Secretary denied the application on the ground that "under existing law the Secretary of the Interior has no authority to grant grazing leases or permits in the Yosemite National Park."

Much as one may sympathize with the troubles of stockmen in a dry season, it would be nothing less than a calamity to return to the old conditions when it was doubtful whether the park was administered primarily for the benefit and enjoyment of the people, or for the benefit of those who desired to use and ruin the people's playgrounds for private gain. In the Rainier National Park campers and tourists are not even allowed to pick flowers or destroy vegetation. What could be the meaning of such a provision if the Secretary were to permit wholesale destruction of the undergrowth and floral covering of the park by cattle and sheep?

A Questionable Experiment. On account of the drought conditions complained of in the above application, the Secretary of Agriculture, as an emergency measure, has permitted cattle and sheep men access to certain high Sierra ranges included in national forests that are ordinarily closed to stock. Certainly as far as sheep are concerned we shall watch the experiment with a great deal of apprehension. No animal is quite so destructive of the purposes for which forest reservations are established. It was largely owing to efforts of the Sierra Club that sheep have been excluded from the Sierra for many years past. It is proposed to care for flocks numbering about forty thousand head. The amount of damage these will be able to inflict upon the reproductive growth of the affected ranges may easily prove greater than the value of the sheep. If this turns out to be the case, there will be little solace in the knowledge that the profit is private and the loss is national. In a State like California it is unfortunately too easy to claim necessity for the continuance or repetition of such a precedent.

NATIONAL WILD LIFE CONSERVATION. In the history of this country no single year has seen so much accomplished in the form of legislation to protect and conserve what remains to us of our wild life resources. The most notable achievement is the passage, by the last Congress, of the McLean bill, which authorizes the National Government, through the Department of Agriculture, to take full charge of the safety of our migratory wild birds, from ducks and geese down to the tiniest insect eaters, the warblers and humming birds. It will now be possible for the strong arm of the Federal Government to prevent the appalling slaughter of song birds for food which has been such a disgraceful annual feature of certain kinds of hunting in some of the Southern States.

Another great step forward is contemplated in the new tariff bill of the present Congress. One of its clauses provides for the total suppression of all importations of wild birds' plumage (except ostrich plumes) for millinery purposes. This measure has called forth strong advocacy all over the country, and we hope that no emasculating amendments of any kind will be permitted. The so-called "feather trade," of course, is fighting the measure frantically.

RESULTS OF THE CALIFORNIA CAMPAIGN. In California most gratifying results have attended the campaign for better legislation conducted by the California Associated Societies for the Conservation of Wild Life. The following are some of the results: Civil service for fish and game wardens; shipments of protected wild game prohibited, together with the sale of wild ducks (except during November); provision for the propagation of wild game in captivity; bag limit on ducks and quail fifteen a day, and thirty a week; possession of plumage of wild birds for any purpose prohibited; aliens prohibited from hunting and bearing firearms. The rallidæ, limicolæ, band-tailed pigeon, wood duck, ibis, and sea otter are afforded absolute protection. As soon as the Governor affixes his signature to these measures California will have taken a long step toward the preservation of her splendid wild life resources.

DIRECTOR MCADIE LEAVES THE COAST. Members of the Sierra Club will be interested to learn that Director Alexander G. McAdie has accepted the Professorship of Meteorology at Harvard, and the Directorship of the Meteorological Observatory at Blue Hill, Mass., where so much work in exploring the upper air has been done in the past few years. While we deeply regret his going, the best wishes of the Club follow him into his new field of labor.

REPORTS.

REPORT OF THE SECRETARY.

MAY 4, 1912, TO MAY 3, 1913.

The Sierra Club has just completed a year of healthy growth. The total membership is now 1590, making a net increase of 62 members for the year. The total number of new members added during the year was 249, which is the largest number for one year in the history of the Club. The reason the net increase was not greater was because a large number were dropped from the list who were in arrears for dues and who had previously been carried on the list from year to year. The financial showing, as indicated by the Treasurer's report, is very satisfactory, especially in view of the fact that $500 was appropriated out of the Club treasury to purchase for the Club shares in the Tuolumne Meadows or Soda Springs property. The Club will shortly own very nearly a $2,000 interest in the property as a result of gifts of shares from subscribers and purchases of other shares. Other subscribers who are financially able to do so have signified their intention of giving or leaving their shares by will to the Club. As soon as the Club shall have acquired this property it will doubtless take steps to erect on it a permanent Club lodge. Anyone familiar with the situation of this property will appreciate the great advantage which would result from having headquarters in such a central place from which the many surrounding lakes, peaks, waterfalls and cañons can be easily reached.

The Directors of the Club have just made a vigorous protest against allowing cattle and sheep to enter the Yosemite National Park. The unusually dry season was being used as an argument for this destructive invasion. We are glad to note that Secretary of the Interior Lane has decided that under the law this cannot be permitted.

The Local Walks taken in the vicinity of both San Francisco and Los Angeles are becoming more popular and better attended each year. The Southern California Section is constructing a beautiful lodge in Santa Anita Cañon, to be the objective point for many week-end and Sunday tramps.

The 1913 Outing party to Kings River Cañon and Tehipite Valley has long since been complete. It is a matter of great regret that we have not been able to accommodate all who apply. A lodge in Tuolumne Meadows would aid in the solution of this problem for many members who wish to make mountain trips.

Very respectfully,

WM. E. COLBY, *Secretary.*

REPORT OF THE TREASURER.

MAY 4, 1912, TO MAY 3, 1913.

TO THE BOARD OF DIRECTORS OF THE SIERRA CLUB:

Gentlemen: I beg to submit the following report on the finances of the Sierra Club for the year ending May 3, 1913:—

GENERAL FUND.

Receipts.

Cash on hand May 4, 1912		$2,684.39
Cash received from the Secretary:		
Dues	$4,221.50	
Advertisements	930.00	
Rent of Club Rooms	180.00	
Sale of BULLETINS and maps	12.85	
Sale of Club Pins	24.00	
Interest on savings deposits	39.90	
Total receipts		5,408.25
		$8,092.64

Expenditures.

Publications:		
Sierra Club BULLETINS Nos. 47 and 48, 4000 copies each:		
Printing and binding complete	$1,497.25	
Postage	253.94	
Advertising expenses	235.00	
Envelopes	39.25	
	$2,025.44	
APPALACHIA, April, 1912:		
Postage	$ 102.00	
Envelopes	21.00	
Express	8.50	
	$ 131.50	
Total		$2,156.94
Rent:		
Rent of Rooms 402 and 403, Mills Building	$ 645.00	
Rent of telephone (Kearny 2449)	72.95	$ 717.95
Service:		
Salary of Assistant Secretary	$ 690.00	
Additional help	2.50	$ 692.50
Postage for general correspondence		$ 323.73
Carried forward		$3,891.12

Brought forward		$3,891.12
Soda Springs property:		
Cash voted by Directors for purchase of shares	$ 500.00	
Cost of circulars, recording deed, taxes, etc.	29.95	$ 529.95
Cash voted by Directors to Southern California Section		$ 150.00
Le Conte Memorial Lodge in Yosemite:		
Salary of Custodian	$ 105.00	
Sundry small expenses	22.15	$ 127.15
Club Room expenses		$ 71.62
Library		77.71
Stationery		94.75
Local Walks		61.75
Circulars		33.35
Expenses on account of National Parks		83.25
Purchase of Club Pins		19.75
Wild Cat Cañon Reunion		15.00
Election expenses, ballots, etc.		14.50
Contribution to Bird Preservation Society		10.00
Miscellaneous telegrams		7.90
Exchange		4.61
Taxes		2.83
Sundries		13.85
Total Expenditures		$5,209.09
Cash on hand May 3, 1913:		
On deposit, First National Bank	$1,967.52	
In Security Savings Bank	553.14	
In Savings Union Bank and Trust Co.	355.34	
In the Secretary's drawer (cash)	7.55	2,883.55
Total		$8,092.64

PERMANENT FUND.

On deposit in Security Savings Bank, May 4, 1912	$1,026.75
Interest accumulated during year	39.78
New Life Memberships during year	100.00
Total on deposit in Security Savings Bank, May 3, 1913	$1,166.53

EDW. WHYMPER FUND.

Amount of bequest deposited in Savings Union Bank and Trust Company, August 23, 1912	$ 218.93
Interest accumulated	2.35
Total now on deposit	$ 221.28

Respectfully submitted,

J. N. Le Conte, *Treasurer.*

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of noteworthy trips or explorations, together with brief comments and suggestions on any topics of general interest to the Club. Descriptive or narrative articles, or notes concerning the animals, birds, fish, forests, trails, geology, botany, etc., of the mountains, will be acceptable.

The office of the Sierra Club is Room 402 Mills Building, San Francisco, where all Club members are welcome, and where all the maps, photographs, and other records of the Club are kept.

The Club would like to secure additional copies of those numbers of the SIERRA CLUB BULLETIN *which are noted in the list in this number as being out of print, and we hope any member having extra copies will send them to the Secretary.*

A LETTER FROM JAMES BRYCE.

May 3, 1913.

DEAR MR. COLBY:

Thank you for your kind words of greeting. It would have been a great pleasure to meet you and your friends here had that been possible. We are off this morning for China and Japan.

All best wishes for the Sierra Club and its members and its efforts to save Nature. Please greet John Muir cordially for me.

Very sincerely yours,

JAMES BRYCE.

[EDITOR'S NOTE: The above came in response to an invitation to meet the members of the Sierra Club at a reception.]

OUR RECORDS ON ORIZABA.

MEXICO CITY, April 28, 1913.

Gentlemen:

I take pleasure in advising that on the 18th of last month I, in company with the following gentlemen, ascended the peak of Orizaba: Mr. Hiram W. Hixon, of Philadelphia; Mr. Hugo Brehme, of Mexico City; Mr. Carl Jacobsen, of Mexico City.

The box containing the Record of the Sierra Club was found in perfect condition. Our trip was a most successful one.

Yours very truly,

A. MELGAREJO,

Apartado 504, Mexico, Mex.

To the Sierra Club,
San Francisco, Cal., U. S. A.

THE CAÑON OF THE MIDDLE FORK OF THE FEATHER RIVER.

There has recently appeared in the San Francisco papers several notices of the discovery of an impassable cañon and wonderful water-falls in Butte County, California. The basin referred to lies north of Mooretown and the cañon of the Middle Feather is here Yosemite-like and nearly impassable. There is also a picturesque water-fall on Fall River, a branch of the Middle Feather. This fall is probably over 400 feet in height and is well worth a visit by all lovers of natural scenery. The cañon of the Middle Feather for some miles above Fall River is extremely rugged, reaching a depth of 3,000 feet, but can hardly be said to be impassable throughout, as it is crossed by trails at two points. An engineer of the Western Pacific Railway lost his life in exploring the cañon some years ago, when this route was under consideration for the railway.

There is, however, nothing new about the district. It has been well known to the residents of the region for probably fifty years, and a picture of the Fall River falls was published in the Bidwell Bar folio of the United States Geological Survey about 1898.

H. W. TURNER.

SAN FRANCISCO, March 28, 1913.

CALIFORNIA BOTANICAL CLUB.

On Saturday afternoon, April 12th, some twenty persons interested in various phases of plant life gathered at the call of Dr. W. L. Jepson, in the meeting room of the Oakland Public Museum for the purpose of considering the formation of a botanical society. A preliminary organization was effected and a general organization meeting held in the same place on the evening of April 26th. Within a month following its organization the society has enrolled 120 members and gives promise of becoming a useful and permanent organization.

It is the object of the society to promote and encourage study of the native and cultivated flowers, trees, shrubs, ferns, fungi, mosses and other plants of California; to hold evening meetings for lectures and discussions, and day meetings for field excursions; to take part in the movement for the preservation of the wild flowers; to hold exhibitions of plants; to publish an illustrated journal of its proceedings and to carry on other activities within the province of a botanical society.

It may confidently be expected that this new society will be a valuable ally to the Sierra Club and other similar organizations in their work of general welfare, the preservation of scenery, protection of natural parks, and the saving from destruction of historic trees or landmarks.

The officers of the society are: President, Dr. W. L. Jepson; first vice-president, Mr. Guy Smith; second vice-president, Dr. W. F. Badé; corresponding secretary, Miss Rowena Beans; secretary-treasurer, Mrs. B. W. De Veer, 1426 Oak St., Oakland, California. Inquiries regarding membership should be addressed to the secretary-treasurer. The dues are one dollar per year.

FALL RIVER FALLS, BUTTE COUNTY, CALIFORNIA. THE CAÑON OF THE MIDDLE FORK OF THE FEATHER RIVER.

VIEW IN (NORTH) CALAVERAS GROVE OF BIG TREES (SEQUOIA WASHINGTONIANA). JOHN AND JOSEPH LE CONTE TREES.
Photograph by Walter L. Huber.

"PIONEER'S CABIN" TREE (SEQUOIA WASHINGTONIANA). BASE TUNNELED FOR DRIVEWAY.
Photograph by Walter L. Huber.

VIEW IN (NORTH) CALAVERAS GROVE OF BIG TREES (SEQUOIA WASHINGTONIANA). "MOTHER OF THE FOREST" TREE IN DISTANCE, NOW BURNED, CONTAINED 105,464 BOARD FEET OF LUMBER.

Photograph by Walter L. Huber.

VIEW IN (NORTH) CALAVERAS GROVE OF BIG TREES (SEQUOIA WASHINGTONIANA).

Photograph by Walter L. Huber.

LOG FROM BASE OF BIG TREE (SEQUOIA WASHINGTONIANA) FELLED IN 1854, (NORTH) CALAVERAS GROVE. CIRCUMFERENCE 92 FEET. THE STUMP OF THIS TREE HAS BEEN SMOOTHED OFF TO FORM A DANCE PLATFORM.

Photograph by Walter L. Huber.

The Calaveras Big Tree Groves.

By Walter L. Huber.

The Calaveras Groves of Big Trees are located in Calaveras and Tuolumne counties, some ten miles above the Mother Lode Mining Belt. These groves have been known since the early mining days of California and, in fact, were the first groves of big trees (*Sequoia washingtoniana*) to be discovered. (North Grove discovered by A. T. Dowd in 1854.)

The larger, known as South Grove, is in Tuolumne County. It covers an irregular area of 441.5 acres along the narrow V-shaped valley of Bigtree Creek, a tributary of the North Fork of Stanislaus River. The North Grove has an area of 49.5 acres and occupies a small basin drained by a tributary of San Antonio Creek, which creek is itself a tributary of Calaveras River.

The two groves are only about six miles apart, but are separated by a secondary divide from the Sierra Nevada Mountains and by the cañon of the North Fork of the Stanislaus River which is about one thousand feet deep. North Grove is easily accessible by a wagon road from Angels (twenty-two miles). South Grove is reached only by trail from a point on the wagon road near North Grove.

Both groves are entirely in private ownership. Almost all of the trees are owned by Mr. Robert Whiteside. Several attempts have been made to have their ownership returned to the National government. Congress has authorized the exchange for them of timber lands of equal value, but the owner has been unwilling to entertain this proposal. It is doubtful whether they can be obtained except by purchase, and this method has not up to the present time been authorized by Congress. These groves are a natural wonder well worthy of preservation, and it is to be hoped that they can be acquired by the Federal government and included in a National monument.

There are in the two groves 862 big trees (excluding 3,462 big trees less than thirty-six inches in diameter). Three individual trees contain more than 100,000 board feet of lumber each. The diameters of several trees exceed thirty feet and their heights are more than three hundred feet. Mingled with the big trees are hundreds of splendid sugar pine, white fir and yellow pine trees.

Kern River Trail Improvement.

Bakersfield, California, May 24, 1913.

Mr. Wm. E. Colby,

402 Mills Bldg., San Francisco, California.

Dear Mr. Colby: I have submitted a plan for improving the trails in the Monache country, as follows:

A trail commencing at Kern Flats, Sec. 1, T. 20 S., R. 33 E., and extending northeasterly through the following points to Carrol Creek, in

Sec. 31, T. 16 S., R. 36 E.: Following the present trail to Jordan Hot Springs; thence to Casa Viejo (lower end); thence northward via River Spring to Indian Head; thence following the old trail to summit of Toowa Range; thence a new trail along this summit crossing east of Kern Peak; thence down Bear Creek (the creek following northward from Kern Peak); and up the South Fork, via the Tunnel and South Fork Meadows, and on to Mulkey Meadows along the old trail; thence across the summit via a new grade and around south of Horseshoe Meadows to the old mill on Cottonwood Creek; thence around the new grade to Little Cottonwood Creek; thence paralleling the old Hockett trail on a new grade down the mountain to Carrol Creek.

To secure an allotment from the 10 per cent Road and Trail Fund, it is necessary to show that the expenditure will render material benefit to the public at large as well as assisting in the administration of the forest in general, and an expression of opinion or an endorsement from the Sierra Club on this point would be appreciated.

The estimated cost of this trail to complete it is $2,800.00 or $66.66 per mile, it being 42 miles in length. The maximum grade contemplated is 15 per cent.

The proposed new trail near Kern Peak materially shortens the distance from Indian Head to the Tunnel and makes Kern Peak, which commands one of the finest views in the Sierras, easily accessible, as we plan to construct a side trail to its summit for the use of our fire lookout who is to be stationed thereon.

Another trail on which I have submitted plans for construction and requested appropriations, commences at Junction Meadows and extends northeasterly along Tyndall Creek, crossing the summit and descending Shepards Creek about two and one half miles, thence swinging over into Symmes Creek and connecting with the road shown on the Whitney topographic sheet. This trail would place Independence within twenty-four miles of Junction Meadow by trail. The seven miles of trail eastward has a short stretch of 20 per cent grade, the balance being 15 per cent. The estimated cost is $1,300.00, and $690.00 of this has been subscribed by stockmen and residents of Owens Valley.

I am told that for $500.00 a trail could be constructed from Tyndall Creek to connect with the Bubbs Creek trail.

I should be glad to know what you think of these two trails and to what extent you believe they will benefit the public in general.

This outline can be more readily understood if copies of the Olancha and Mt. Whitney quadrangles are before you.

If you know of any means of our securing additional financial assistance in the construction of these trails, I would be glad to learn about it.

Very truly yours,

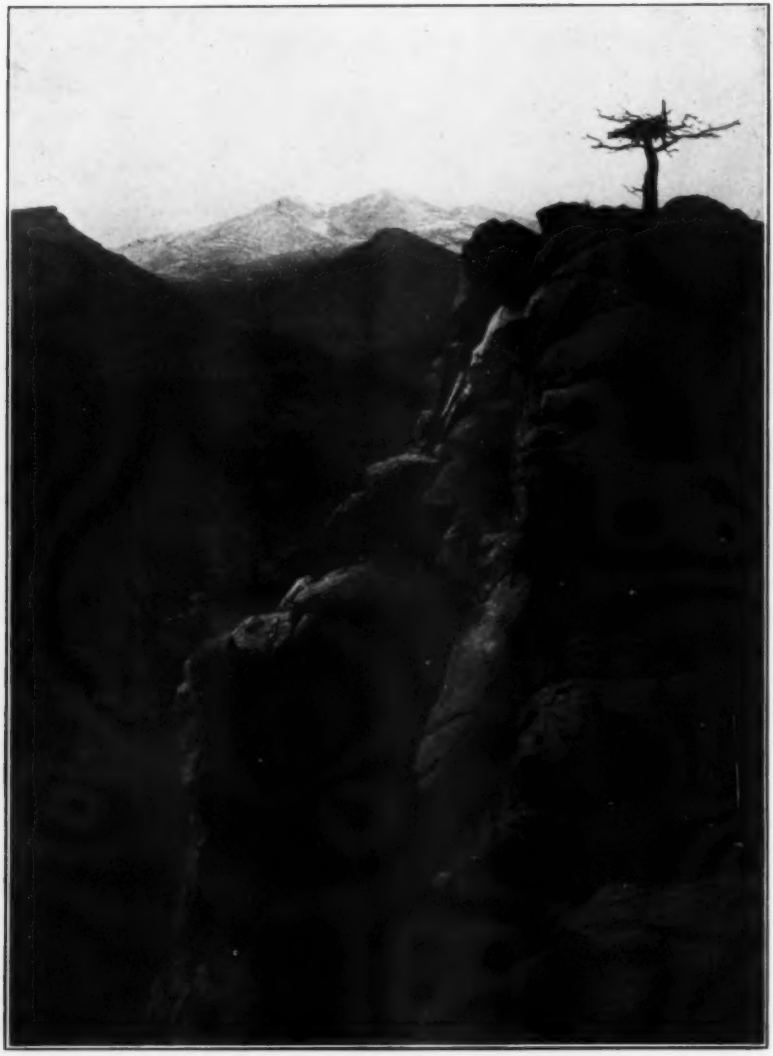
W. J. Rushing,

Forest Supervisor.

IN BEAVER WORLD. ENOS MILLS. THE CABIN WHICH HE BUILT AND IN WHICH HE LIVED TWENTY-FIVE YEARS.

See page 122.

Photograph by H. W. Gleason.



THE PROPOSED ROCKY MOUNTAIN NATIONAL PARK.

See page 113.

Photograph by H. W. Gleason.

NATIONAL PARKS.

Proposed Rocky Mountain National Park.

The proposed Rocky Mountain National Park is a project heretofore known as the proposed "Estes National Park." At the suggestion of various persons the name "Estes" has been abandoned and the name "Rocky Mountain" adopted, as the former name is somewhat local and meaningless and the latter marks the park as being a typical area of the mid-continental Rocky Mountains; that is to say, an area of lofty granite peaks and intermountain plateaus.

The proposed boundaries, as agreed upon by all parties, comprise an area of about 700 square miles in north-central Colorado. The park is an irregular area bounded principally by streams and water divides, about fifty miles long by twenty miles wide at the maximum. It centers about Longs Peak, one of the best known of the Rocky Mountain peaks, altitude 14,255, at the foot of which is the home of Enos A. Mills. The park includes practically all the area which Mr. Mills' books have made familiar to the public.

Besides Longs Peak, the park includes a large number of other lofty peaks, including the following: Arapahoe Peak, 13,520 feet; Mt. Audubon, 13,173 feet; Hagues Peak, 13,554 feet; Fairchild Mt., 13,509 feet; Mummy Mt., 13,410 feet, etc. The park includes about fifty miles of the Continental Divide between the Pacific and Atlantic waters. In the area lie a very large number of small glacial trough lakes and at least one small glacier—probably more. The well-known towns of Estes Park and Grand Lake are on the borders of the park, but not in its boundaries. The park area proper is nearly all high mountain country, perhaps half of it being above timber-line and no considerable part of the area below 8,000 feet.

The park is one of the most accessible in America, as it is distant from Denver at the nearest point only about thirty-six miles as the crow flies, or about forty-five miles by road, and is still closer to the large towns of Boulder, Longmont and Loveland. The park possesses great possibilities as an area for automobile touring, inasmuch as the rounded contours of the country make it possible to build roads which will carry the automobile traveler for many miles along high ridges which exceed 12,000 feet in altitude. From these points a view can be had of perhaps thirty mountain peaks exceeding 14,000 feet in altitude and several hundred miles of the great American plains which break away from the mountains within twenty miles of the park.

The park has a flora very typical of the high transitional, subalpine and alpine zones, and a large animal life, including mountain sheep, ptarmigan and other timberline residents.

NATIONAL PARKS ILL KEPT—COST AND DIFFICULTY OF REACHING THEM DETER MANY TRAVELERS.

(N. Y. *Times*, October 20, 1912.)

TO THE EDITOR OF THE NEW YORK TIMES:

In the editorial article on "The Grand Cañon" you express surprise that Americans should be constantly crossing the Atlantic to visit the beautiful scenes and famous resorts of Europe while our own country is comparatively neglected, although it holds out to every traveler, and particularly in the great, wide West, such wonderful scenes of grandeur and beauty as few places in the world can show.

The explanation, I think, is not far to seek. Our National parks, which include within their boundaries these great masterpieces of nature, and which were set aside for the enjoyment and enlightenment of all the people, are not administered as they should be. It ought to be possible to visit the most interesting and impressive scenes over tolerably well-kept roads and trails, with an assurance of reasonable comfort and in a manner in keeping with the grand, simple, natural environment, and this should generally be possible at a cost within range of the traveler of average means. But he who expects to find these conditions will often meet with disappointment.

Our National parks and National monuments are administered by various departments of the Government—those of the Interior, War, and Agriculture—and, owing partly to this distribution of powers, it has not been possible to establish a uniform and well-considered system of supervision and development. The annual appropriations by Congress are entirely inadequate, except, perhaps, in the case of the Yellowstone National Park, to meet the many forms of expense connected with a thoroughly efficient management.

To those who have given the most serious and disinterested thought to the problem of our National parks and National monuments it has appeared that their many needs can best be met by placing them all under an independent bureau, a Bureau of National Parks, which shall be entrusted with their preservation, proper development, and administration.

Some day these grand National possessions will be appreciated. Then the thousands who now go to Europe will be glad to "see America first," assured of an ample return in pleasure, health, and instruction.

G. F. SCHWARTZ.

NEW YORK, October 17, 1912.

SECRETARY'S OFFICE, DEPARTMENT OF THE INTERIOR,

WASHINGTON, D. C., May 17, 1913.

Gentlemen:—Replying to your telegram of April 23d, petitioning, in joint meeting, the temporary opening of the Yosemite National Park to stock grazing to relieve the present drouth conditions existing in southern and central California, I have to advise you that I have given this matter most careful consideration and have considered your

request from every possible standpoint. I realize the gravity of the situation as it presents itself to the livestock interests within the region affected. Much as I sympathize with those affected, and much as I am inclined to do what might be permitted under all the circumstances to relieve the situation, I regret that I must deny, for the present at least, your and other applications of like tenor.

Incident to the decision of an administrative question which was brought before the department in December, 1912, the Assistant Attorney-General for this department had referred to him by my predecessor the question—whether the Secretary of the Interior, under existing legislation respecting the Yosemite National Park, was authorized to grant leases of land in the park for grazing purposes,—and an opinion was rendered by him to the effect that under existing law the Secretary of the Interior had no authority to grant grazing leases or permits in the Yosemite National Park. Furthermore, I am advised that the meadow land within the park fit for general grazing which is not private property is comparatively limited in extent, and is the only land in the park outside the valley that tourists and campers could use to sustain their stock while enjoying the park, and that there has also been an increase in the deer and other game in the park, which the introduction of cattle or sheep would seriously affect.

The decision of the Assistant Attorney-General above referred to and the other phases of the matter, together with the fact that the law imposes upon me the administration of this reservation primarily for the benefit and enjoyment of the people, impels me to the conclusion reached and announced above. If it were not for these considerations, I would feel strongly prompted to afford the relief requested.

Very truly yours,

(Signed) FRANKLIN K. LANE.

THE CALAVERAS ALPINE ASSOCIATION, and
THE TUOLUMNE LIVESTOCK ASSOCIATION,
Sonora, California.

CAVES IN OREGON—PROPOSED NATIONAL PARK.

A very successful outing to the Josephine County caves of Oregon was enjoyed recently by the Mazama Club. One hundred and ten members made the trip. Mr. Wm. P. Hardesty, treasurer of the Mazamas says: "The caves are not 'mammoth' caves, but they are certainly wonderful and well merit the attention of tourists. The stalactite formations of marble are especially beautiful. A lighted candle held behind them illumines the entire structure and shows the delicacy of texture and color. The prevailing color of the walls is a cold stone gray, decorated by delicate traceries of light brown."

FORESTRY NOTES.

WM. E. COLBY, Editor.
WALTER L. HUBER, Assistant Editor.

STOCK IN THE HIGH SIERRA. On account of lack of feed in the lower ranges, due to unusually dry weather conditions, many cattle and sheep men have applied to the Forest Service for relief. To meet this emergency, certain high Sierra ranges ordinarily closed to stock will be used this season. Approximately 40,000 head of sheep and 2,000 head of cattle will be cared for. Definite areas within these ranges have been reserved for campers' stock.

TIMBER SALES IN CALIFORNIA. Timber sale operations on the National Forests in California have been increasing at a rapid rate during the past few months and a number of important sales have been made. The largest of these was an 800,000,000-foot sale to the Sierra Sugar Pine Company on the Sierra National Forest. About seventy miles of railroad will be required in connection with this sale and two years are allowed in the contract for preliminary construction work before operations actually begin. The contract covers a cutting period of twenty years. This sale is in one of the best sugar and yellow pine regions of the State. Another sale of considerable size was made to the M. A. Burns Timber Company on the Shasta Forest, for a total of 182,273,000 feet.—*American Forestry.*

THE STATES RIGHTS MOVEMENT. We have seen the policies advocated by the Forest Service in the handling of timber, grazing, water power and lands, win their way to recognition in the face of bitter opposition, solely on their merits. Under national administration of the grazing privileges, stock wars have ceased, and the number of small owners of stock has increased tremendously. Lumbermen have found that they could do business with the Government, and of late have been willing to undertake contracts for twenty years. Settlers are given lands, but fraudulent claims are not permitted. It can now be stated with truth that the population directly dependent on and residing within or near these national forests is almost unanimous in its support of the present policy and ready to defend the Government against all attacks. The only local exceptions to this rule are found to be individuals who have been prevented from acquiring something to which they were not fairly entitled, such as a fraudulent mining claim or a timber homestead.

But this national policy is not without its enemies, and they are numerous and powerful. In almost every instance, the opponents of the Forest Service are found to be directly interested in some form of special privilege which would flourish with less interference should the strong hand of the Nation be withdrawn. Cloaked under various disguises, one of which is the plea that agricultural lands are being deliberately withheld from deserving pioneers, these interests are endeavoring to secure:

1. Free and unregulated grazing, which would enable owners of large bands of sheep to monopolize the public range and drive out the small owner and cattleman.

2. Freedom from close inspection of mining claims, which would permit the patenting of wildcat mines or the acquiring of valuable timber under false pretenses.

3. Throwing open of large areas of land containing timber of immense value, in order that title may pass from the Nation to individuals and thence to large lumber companies and corporations.

4. Removal of restrictions on cutting, so that full exploitation of the forests may take place immediately with no provision for securing reproduction and a future crop of timber.

5. Encouraging an influx of settlers upon lands regardless of their agricultural value, in order to boom communities for the benefit of railroads, real estate values and trade.

Attempts to break down the national forest administration and secure these objects have largely failed, due to the high standard of integrity and ability that has so far been maintained in the Forest Service from the chiefs down through the rank and file to rangers and forest guards.

Despairing in this effort, the political opponents of the national forest policy now advance the plea that these resources belong by right to the States and should speedily be turned over to them. No one need misunderstand this argument for an instant. It is urged with the hope that the States will prove less obdurate and will permit the exploitation of these national reserves in a manner more in keeping with the desires of the larger interests.—*American Forestry.*

BOOK REVIEWS.

EDITED BY MARION RANDALL PARSONS.

"THE STORY OF MY BOYHOOD AND YOUTH." * The life of a child among educated people to-day is so sheltered from hardship, so protected from even minor discomfort, that the story of this stern Scotch boyhood comes to us almost like a record from a different world. We read how Mr. Muir was sent to school before he had "completed his third year," and how a little later long lessons in French, Latin, and English, in spelling, history, arithmetic, and geography were supplemented at home by so many Bible lessons that "by the time I was eleven years of age I had about three-fourths of the Old Testament and all of the New by heart." After the journey to Wisconsin, for long school tasks and the sound thrashings that accompanied each mistake was substituted the unremitting toil of reclaiming a farm from the wilderness—in summer time a "hard sweaty day of about sixteen or seventeen hours" of heavy farm labor, where "grinding scythes, feeding the animals, chopping stove wood and carrying water up the hill from the spring" constituted the chores to be done before breakfast, a mere prelude to the real work in the harvest fields; in winter, though "fuel was embarassingly abundant and cost nothing but cutting and common sense . . . the only fire for the whole house was the kitchen stove . . . around which in hard zero weather the whole family of ten persons shivered, and beneath which in the morning we found socks and coarse, soggy boots frozen." "Excepting Sundays we boys had only two days of the year to ourselves, the Fourth of July and the First of January. Sundays were less than half our own, on account of Bible lessons, Sunday School lessons and church services."

There is much in the book to make us thankful that brighter, easier lives fall to the lot of the children we now know. Yet when we consider the discipline of mind and body, the fortitude, the rare powers of concentration, the keen appreciation of the scanty hours of pleasure that this harsh existence engendered, we wonder whether the indulged children of to-day, satiated with amusement and ignorant of work, will at three score years and ten face life with the unfailing interest, the zest of enjoyment, the unflagging intellectual activity that so distinguish Mr. Muir to-day. It was a life, perhaps, to deaden the ambition and dull the perceptions of many a child; but in this vigorous Scotch lad the hunger to learn and create, the interest in wild nature and love of its beauty rose triumphant above hard labor and time-starved opportunity.

* *The Story of My Boyhood and Youth.* By JOHN MUIR. Houghton Mifflin Company, Boston and New York. 1913. With illustrations from sketches by the author. 287 pages. Price, $2.00 net.

Of absorbing interest is the story of the growing boy wresting from his hours of sleep the leisure to work out his inventions—his "early-rising machine," self-setting sawmill, thermometer, etc., which were destined to open the door for the education he so longed for. Equally absorbing are the chapters on the plant and animal life of that Middle West wilderness, much of it vanished now as are the vast fields of California wild flowers that Mr. Muir also saw in their full glory. Of the passenger pigeons he says, "I have seen flocks streaming south in the fall . . . like a mighty river in the sky, widening, contracting, descending like falls and cataracts, and rising suddenly here and there in huge ragged masses like high-plashing spray."

The book is full of beauty and of the exultant joy of youth. "Oh that glorious Wisconsin wilderness! Everything new and pure in the very prime of the spring when Nature's pulses were beating highest and mysteriously keeping time with our own! Young hearts, young leaves, flowers, animals, the winds and the streams and the sparkling lake, all wildly, gladly rejoicing together!" As we close its covers the strongest impression that lives with us is of a boy's life, not darkened by long days of toil, but brightened by an inner light that made visible to him the glory and the wonder of the world. Like the little black water-bugs whose playing in the meadow springs he loved to watch, Mr. Muir's heart all his life seems to have been "dancing to a music" most of us never hear. M. R. P.

"Our Vanishing Wild Life." During the past year more laws have been enacted for the preservation of our American bird life than at any time in the country's history. To achieve this no single influence threw as much weight into the scale as Director William T. Hornaday's "Our Vanishing Wild Life."* Its burning and indignant pages remind one of the zeal of the old anti-slavery days when the force of great moral convictions won the day against greed and wrong. The book is profusely and beautifully illustrated, and packed with a startling array of facts from cover to cover. An idea of its importance may be gathered from the fact that the New York Zoological Society has expended nearly ten thousand dollars in printing and distributing copies of the book to every law-maker in the United States, every governor, every State game commissioner and State game Warden, and about five hundred newspapers. During the recent successful campaign of the California Associated Societies for the enactment of better protective laws in California a copy of the book was sent to every member of the Assembly and of the Senate. Mr. Hornaday makes it clear that wild life has its ethical as well as its sentimental and practical aspects. When one considers that within the memory of man twenty-three species of North American birds have practically been exterminated and that each year two and one-half million gun-men are shooting the life out of the dwindling

* *Our Vanishing Wild Life.* By William T. Hornaday. Charles Scribner's Sons, New York. Price $2.00.

remainder, it is apparent that this book comes not a moment too soon. There surely is something absurdly wrong about the fact that the nation whose totem is the eagle and whose thanksgiving divinity is the turkey should be doing its best to exterminate them as completely as California has exterminated its totem, the grizzly bear. If a single specimen of the latter is still alive it will have to be sought in the zoological garden in Berlin! This book deserves wide reading and is almost sure to run through many editions. W. F. B.

"WILD LIFE AND THE CAMERA."* What aid the camera may render the naturalist is remarkably shown in this very attractive volume by A. Radclyffe Dugmore. Perhaps the most interesting phase of his pursuit is the opportunity it affords to study the individual characters of the birds and animals he has so successfully photographed in their natural surroundings in the open. A firm believer in animal intelligence, Mr. Dugmore is far from carrying his theories to the extravagant lengths of some writers. His views are presented modestly and are based on actual observation of many individuals of the same species.

Speaking of the concealment of bird's nests for the protection of their young, he says, "In taking these precautions the bird may be said to be simply following out the habits of its nature, so that it does come under the heading of that much-abused word 'instinct.' But at times birds are forced to resort to remarkable expedients that their eggs and young may be protected. Then it is that we see a display of what can only be termed intelligence: a careful weighing of existing conditions and formulating of plans to outwit enemies." He cites an instance, illustrated with photographs, of a pair of red-eyed vireos who entirely rebuilt their nest to rid themselves of an egg laid there by a parasitic cowbird. Tameness among wild creatures Mr. Dugmore believes to be "a quality . . . of the natural disposition of the individual. . . . With some birds I have spent days in trying to convince them that I intended no harm . . . others of the same species became accustomed to my presence after less than an hour."

The chapters devoted to the birds are all delightful. Wonderfully appealing and attractive are the photographs of parent birds and nestlings. Among the chapters on fishing, that relating to the golden trout will particularly interest Sierra Club members. "In point of beauty," Mr. Dugmore thinks, "the golden trout should be given first place among the freshwater fish of North America . . . the most exquisite, dainty and wonderfully colored."

The Caribou Migration of Newfoundland, the tracks of animals in the snow, and the story of a porcupine and a possum hunt are among other good things in this book. It has not a dull page in it and the photographic illustrations cannot be too highly praised. M. R. P.

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* *Wild Life and the Camera.* By A. RADCLIFFE DUGMORE, F. R. G. S. J. B. Lippincott Company, Philadelphia. 1912. Illustrated. 332 pages. Price, $2.00 net.

"Field-Days in California." California recently brought a number of notable eastern writers under its spell. Among these was Bradford Torrey, who served his apprenticeship as a bird student and nature lover in the East. His regularly appearing books gained for him a steadily enlarging circle of readers. For three years he had been a resident of beautiful Santa Barbara. There he died last autumn before he had seen even a proof of the latest and, unfortunately, last of his books, "Field-Days in California."* In the delightful opening chapter of "A California Beach" he offers his apology for having fled the more rigorous chastisements of a New England climate. "The implacable years," he writes, "are having their way with me; the almond tree begins to flourish. . . . It is time to be comfortable, something tells me; and so, as bad boys were said sometimes to do in other days, I have run away from school." It seems part of the fitness of things that he was the editor of Thoreau's Journal. No one of our day had more of the latter's unaffected intimacy of observation and simplicity of statement. This book exhibits him at his best. It is full of fascinating ornithological incidents told with scientific truthfulness and great charm of expression. The publishers have appropriately sought to give the volume something of a memorial character by providing a portrait of the author and illustrations of localities treated in the book. W. F. B.

"The Ephebic Oath and Other Essays."† A book of unusual merit is this dainty volume of essays by Alexander McAdie. In its sincerity, its high idealism, its beauty and simplicity of style it may well rank some day as a classic. Many of the descriptive passages are very fine, particularly of the sea fogs which Mr. McAdie loves so well. "Seen from above, the fog is no longer gray and forbidding, but white as driven snow, a coverlet that throws back into sunlit skies the genial warmth of summer days. . . . The very soul of the sea, it rises like a spirit from the breast of waters. . . . Seen from below, a level sweep and monotone of drab; seen from above, a ruffled sea of light and shade, a billowing cradle for the imperious winds." A true San Franciscan, Mr. McAdie also loves the hills. "Although we dwell near the water's edge, we are at heart and in essence a hill people . . . the call of the hills is with us in our busiest hours and eager faces are lit by the soul's yearning for the freedom of the uplifted places, the sacred stillness of the heights. . . . In temples built of unhewn stone we worship, and with one impulse bow before the widespread altars of cloud and sky and hill, asking a rebirth of our better selves." The book, which is most attractively printed and illustrated, is a bit of pure literature of which Mr. McAdie may justly be proud. M. R. P.

**Field-Days in California.* By Bradford Torrey. Houghton Mifflin Company, Boston. $1.50 net.

† *The Ephebic Oath and Other Essays.* By Alexander McAdie. A. M. Robertson, San Francisco. 1912. Decorations by Lucia K. Mathews; frontispiece by Arthur F. Mathews. 63 pages. Price, $1.50.

"In Beaver World."* Another interesting book on wild life based on long and intimate personal knowledge and observation is from the pen of a fellow Sierra Club member, several of whose former works have already been mentioned here. For twenty-five years Mr. Enos A. Mills has been a lover and student of the mountains of the West, notably of Colorado. Early becoming interested in beaver life, during all this time Mr. Mills has had certain colonies of beaver under observation, has noted and taken measurements of their wonderful engineering works—their dams, canals, and houses, has watched the cutting of their harvests and the disasters that wiped out whole colonies or forced the survivors to emigrate. Remarkable instances are given of the magnitude and scope of the work undertaken successfully by these busy denizens of stream and pond. "As animal life goes," Mr. Mills thinks, "that of the beaver stands among the best. His life is full of industry and rich in repose. He is home-loving and avoids fighting. His lot is cast in poetic places."

Though mostly composed of new material, several papers concerning beaver that have already appeared in his earlier books are properly included here, notably chapters in the life of his favorite Moraine Lake Colony. A significant point in the value of nature study is made in Mr. Mills' concluding pages. "Beaver works may do for children what schools, sermons, companions, and even home sometimes fail to do—develop the power to think. No boy or girl can become intimately acquainted with the ways and works of these primitive folk without having the eyes of observation opened, and acquiring a permanent interest in the wide world in which we live." M. R. P.

"California Coast Trails."† Another book crammed full of outdoor interest is J. Smeaton Chase's "California Coast Trails." The author is an Englishman who has resided in California for some time. Accompanied on the first lap of his cruise by an artist companion, Mr. Chase made a nearly continuous trip on horseback from Mexico to the Oregon boundary. He followed the coast, carrying his simple camping outfit on the animal he was riding. According to his own testimony, "the facts and beauties in nature and the humane and historic elements in life" were the "points of special attraction" on this pilgrimage. One must adjudge him to have been notably successful in his attempt to portray these elements of California life, for he has produced a very readable volume. Sketches of the old missions, occasional humble survivals of Spanish-Californian life in out-of-the-way places, and glimpses of sleepy villages far from the railroads, are mingled with exhilarating descriptions of ever changing scenery. Incidents both comic and serious enliven the narrative, and one is glad, finally, that the author was not swallowed up in the quicksand from which he had such a narrow escape.

W. F. B.

* *In Beaver World.* By Enos A. Mills. Houghton Mifflin Company, Boston and New York. 1913. With illustrations from photographs by the author. 221 pages. Price, $1.75 net.

† *California Coast Trails.* By J. Smeaton Chase. Houghton Mifflin Co., Boston. $2.00.

"UNDER THE SKY IN CALIFORNIA."* To many people, who, from a very reasonable distrust of their physical hardihood have denied themselves the coveted experience of life in the open, this readable volume, "written out of the personal experience of man and wife of very limited physical strength," may prove an inspiration and an example. Desert, Sierra, and Coast Range alike offered a field to these mildly adventurous sightseers. Traveling sometimes afoot, sometimes horseback, oftener in a wagon, these Easterners became better acquainted with out of doors California than is one native born Californian in a hundred. The Mission pilgrimage is entertainingly described, and "Springs Days in a Carriage" were devoted to traversing Ramona's country. The chapters on the Deserts and the Mountains include most of the camp experiences. In the main the advice offered the more sybaritic type of camper is excellent; but we, who must needs plead guilty to that "general soiled air of wildness" in our woodland hours that Mr. Saunders so deplores, may yet venture to take issue with him on some of his refinements of "comfort." The use of silver spoons and white linen napkins while camping as a solace to one's self-respect hardly seems to justify the additional sense of responsibility they entail. One of the great benefits of camp life, particularly to a woman, is the emancipation it offers from the thousand petty, shackling details that go to make up her average day at home. Let even the most luxurious camper beware then how he imports the thralldom to externals into the free life of the open. However, as Mr. Saunders very justly remarks, "Only time and experience can show each camper the exact measure of his or her own needs."

M. R. P.

"THE CLIMATE AND WEATHER OF SAN DIEGO, CALIFORNIA."† Few visitors to the Sierra Nevada return to the lowland regions without a new conception of and interest in the beauty of cloud scenery, there most gloriously manifested. It is a beauty that dwellers in cities may enjoy no less than their more beauty-blessed brethren of country or sea-coast districts. In this admirable book on San Diego climatic conditions, written by a Sierra Club member, several intensely interesting chapters are devoted to cloud formations. Though dealing specifically with San Diego, many of the subjects touched upon are of general as well as local interest. Among these may be mentioned "Mirage, Halo, and Aurora," "Ocean Currents and Weather Conditions," and Meteorological Myths." The San Diego region has long been noted for its delightful and equable climate and

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* *Under the Sky in California.* By CHARLES FRANCIS SAUNDERS. McBride, Nast & Co., New York. 1913. Illustrated from photographs mainly by C. F. and E. H. Saunders. 299 pages. Price, $2.00.

† *The Climate and Weather of San Diego, California.* By FORD A. CARPENTER, Local Forecaster. The J. Horace McFarland Company, Harrisburg, Pennsylvania. 1913. Published by the San Diego Chamber of Commerce. Illustrated with photographs and charts by the author and others. 118 pages.

to the doubter the reasons for its matchless healthfulness and charm are demonstrated by statistical tables and charts. But apart from the value of its accurate scientific information the book has decided merit. It is attractively printed and bound, and the photographic plates, mostly of cloud subjects, are excellent. M. R. P.

"THE SECRET OF THE BIG TREES."* From a famine in Palestine in the days of the Prophet Elijah to the forests of the Sierra Nevada to-day is a far cry, says Mr. Ellsworth Huntington in his recent paper entitled "The Secret of the Big Trees."* Nevertheless a connecting link between these widely separated epochs exists in our big trees. His studies show that the rings of growth in the sequoias indicate that in general the same sequence of climatic changes took place in California and Asia Minor. As the history of climatic changes seems to bear a close relationship to the history of civilization and the movement of races, Mr. Huntington's research opens up questions of very far-reaching import. The paper is intensely interesting and has many fine illustrations. M. R. P.

"TO THE APEX OF THE SELKIRKS."† The May, 1913, issue of the *Outing Magazine* contains an interesting paper by Howard Palmer, Secretary of the American Alpine Club, on the first ascent of Mt. Sir Sandford, the "Apex of the Selkirks."† Situated in the little known region included within the Big Bend of the Columbia River, and so remote that it "compels its assailants to transport their equipment on human shoulders for the better part of a week as a preliminary to the attack proper." Sir Sandford had withstood the attempts of sixteen climbers and their guides, "a record believed to be without parallel in the annals of Canadian mountaineering." The story of its conquest, though modestly told, plainly reveals the difficulties and dangers that were at last successfully overcome. M. R. P.

"THE CANADIAN ALPINE JOURNAL."‡ The 1912 issue of the "Canadian Alpine Journal"‡ contains many papers of interest. The Alpine Club's expedition in 1911 to Yellowhead Pass and the Mt. Robson region is the subject of the leading article. Three scientific papers on the mammals, birds and plants of this region, contributed by scientists sent to join the party by the Smithsonian Institute, are issued as a special number. Both volumes are splendidly illustrated with photographs and maps. M. R. P.

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* *The Secret of the Big Trees.* By ELLSWORTH HUNTINGTON. Government Printing Office, Washington, D. C. 1913. This publication may be purchased from the Superintendent of Public Documents, Washington, D. C., for 5 cents.

† *To the Apex of the Selkirks.* By HOWARD PALMER, F. R. G. S. *Outing Magazine*, May, 1913. Price, 25 cents.

‡ *The Canadian Alpine Journal.* Published by the Alpine Club of Canada. 1912. Vol. IV. Price, $1.00.
The Canadian Alpine Journal, 1912. Special number. Price, $1.00.